TITLE: ENDOVASCULAR CRYOTREATMENT CATHETER

ABSTRACT OF THE DISCLOSURE

An elongated catheter device with a distal balloon assembly is adapted for endovascular insertion. Coolant injected through the device may, in different embodiments, directly cool tissue contacting the balloon, or may cool a separate internal chamber. In the first case, the coolant also inflates the balloon, and spent coolant is returned to the handle via a return passage extending through the body of the catheter. Plural balloons may be provided, wherein a secondary outer balloon surrounds a primary inner balloon, the primary balloon being filled with coolant and acting as the cooling chamber, the secondary balloon being coupled to a vacuum return lumen to serve as a robust leak containment device and thermal insulator around the cooling chamber. Various configurations, such as surface modification of the balloon interface, or placement of particles, coatings, or expandable meshes or coils in the balloon interface, may be employed to achieve this function.

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